

EPM

ENVIRONMENTAL PROJECT MANAGEMENT, LLC

6602 Montclair Ln., Madison, WI 53711

608.277.0575

April 12, 2013

Andrew D. Rackers
Hazardous Waste Program, Permits Section
Missouri Dept. of Natural Resources
P.O. Box 176
Jefferson City, MO 65102-0176

RECEIVED

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AWMD/WRAP-MIRP

RE: 1st Semi-Annual Progress Report for 2013, Expedited Corrective Action Program
Univar USA Inc., 2000 Guinotte Avenue, Kansas City, Missouri.
EPA ID# MOD007158157

Dear Mr. Rackers:

On behalf of Univar USA Inc. (Univar), Environmental Project Management is providing the Missouri Department of Natural Resources (MDNR) with two copies of the semi-annual routine progress report for the above-identified Expedited Corrective Action Program (ECAP) project. This report covers the period since submittal of the previous semi-annual report to the MDNR, including the fourth quarter of 2012 and first quarter of 2013. A description of the completed activities, findings, and future activities is provided below.

Completed Activities

The activities completed over the reporting period for this Univar ECAP project have included the following:

- Collected a set of water levels from each of the routinely monitored wells.
- Completed a groundwater sampling event of active project monitoring wells.
- Evaluated the data generated from the field activities recently completed and prepared this progress report.

The findings from these activities are described below.

Findings

The field activities consisted of completing a groundwater sampling event on February 13, 2013. The monitoring wells were first opened and the depth to water was measured. Following water level collection, each well containing sufficient water was purged of approximately three well volumes and a groundwater sample was collected using a dedicated, disposable bailer. The field activities for this sampling event were completed consistent with the MDNR-approved Quality Assurance Project Plan (QAPP) prepared for this ECAP investigation.

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A summary of the water level elevation in each well from early 2009 through the present is provided in Table 1, along with the direction of groundwater flow at that time. The water level data from this February 2013 event were approximately four feet lower than the prior data from September 2012 (which was generally the lowest at that time), making this February data the lowest recorded water elevations for this project (Table 1).

A water table contour map for the February 2013 water levels is provided in Figure 1 and illustrates the northerly groundwater flow direction noted in Table 1. The groundwater flow direction made a complete reversal in the spring of 2010 and 2011, based on the data in Table 1. This variation in the flow direction appears to be a short-term phenomenon due to the nearby river and the related rather large fluctuations in the water table elevation (fluctuations of as much as 17 feet, as noted in Table 1). There is the possibility that this reversal has occurred at other times of the year when there were no monitoring events to document the reversal.

Groundwater samples were collected from each routinely monitored project well that contained sufficient water for sampling during this February event. Due to the very low water levels, a few wells contained an inadequate quantity of water such that representative groundwater samples could not be collected from those wells. The groundwater samples were analyzed for volatile organic compounds (VOCs, by Method 8260). The VOC analytical data generated from this groundwater sampling event, and all of the previous ECAP investigation VOC groundwater sampling events, are summarized in Table 2. The groundwater sampling field log containing the field data collected from this sampling round is provided in Attachment 1.

The concentrations of total VOCs and chlorinated VOCs (CVOCs) from each groundwater sample location are included in Figure 1 with the water table map, illustrating the approximate distribution of these constituents in the groundwater. The groundwater VOC data over time is also presented graphically for each of the routinely monitored wells in Attachment 2.

The sample results from this event indicate that only one of the locations produced a sample that increased in total VOC concentrations, while three decreased, and two were relatively unchanged, relative to recent sampling events at each well (Table 2 and Attachment 2). Univar continues to note that there have been some relatively large fluctuations in VOC concentrations (both increases and decreases) from some of the monitoring wells over the last few years of sample collection. These fluctuations appear to likely be due, in part, to the alternating groundwater flow direction and relatively large changes in water levels. The graphs of VOCs over time for each of the monitoring wells (Attachment 2) include an overlay with the water levels over time for each well, and a few of the graphs suggest that some of the VOC changes may potentially correlate to changing water levels.

The QA/QC samples associated with this groundwater sampling event are included in Table 2 and consisted of a blind duplicate sample, an equipment blank, and a trip blank. The duplicate sample, collected from Monitoring Well MW-3B, was reported to be within less than 4% of the original sample, and had very similar individual VOC detections. Both the equipment blank and trip blank did not contain any detectable VOCs. The complete laboratory analytical report is provided in Attachment 3.

Future Activities

Univar will continue with the ongoing semi-annual groundwater sampling to collect further data over time from this facility, and will continue to evaluate and interpret the various data as it is generated. The next routine groundwater sampling event will be completed later in the year.

Please do not hesitate to contact Tony Pirelli of Univar at 262-250-1381, or myself at 608-277-0575, should you have any questions regarding this project.

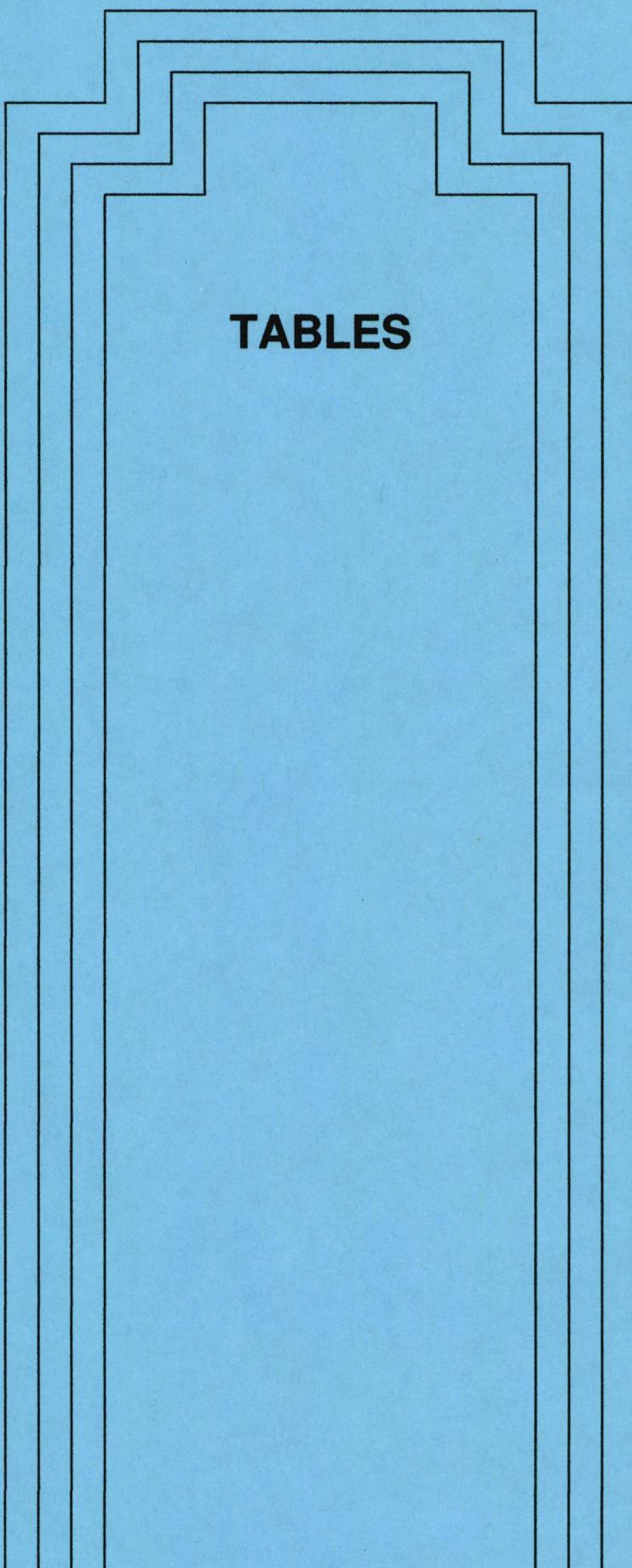
Sincerely,



Thomas C. Sullivan, Missouri R.G. 0577
Principal Scientist/Project Manager

Attachments (one copy of Attachment 3, the laboratory report, provided to the MDNR)

cc: Tony Pirelli, Univar USA Inc.
Christine Jump, US EPA Region 7 (two copies, w/o Attachment 3)



TABLES

TABLE 1
Water Table Elevation and Groundwater Flow Direction
2009-2013
Univar USA Inc., Kansas City, KS

Date	Well									Groundwater Flow Direction
	MW-1A	MW-2A	MW-3B	MW-4A	MW-6A	MW-7A	MW-8	MW-9	MW-10	
1/27/2009	716.11	715.82	715.78		716.21		716.06	715.89	715.54	North
9/23/2009	720.66	720.36	720.33	720.41	720.76	720.52	720.62	720.46	720.05	North
3/26/2010	719.87	720.32	720.21	719.88	719.48	719.86	719.80	720.06	720.90	South
5/21/2010	724.26	723.74	723.97	723.94	724.01	724.01	724.16		724.07	Both
7/13/2010	731.02	730.84	730.64	730.53	730.76	730.69	730.88		730.55	North
10/12/2010	725.87	725.64	725.59	725.61	725.86	725.67	725.74		725.49	North
4/26/2011	720.86	720.97	720.87	721.73	720.56	720.70	720.75	720.84	721.21	South
10/27/2011	724.71	724.43	724.51	724.62	725.03	724.70	724.67	724.58	724.43	North
3/12/2012	718.88	718.73	718.72	718.73	718.92	718.77	718.83	718.86	718.62	North
9/27/2012	717.66	717.50	717.48	717.50	717.66	717.53	717.59	717.52	717.39	North
2/13/2013	713.71	713.48	713.46	713.52	713.73	713.59	713.66	713.54		North
Max Difference	17.31	17.36	17.18	17.01	17.03	17.10	17.22	11.04	15.01	

Notes: (1) Water table elevations are in feet above mean sea level (msl) as measured on dates indicated.
(2) Max Difference is the difference between the highest and lowest recorded water level for that location.
(3) Groundwater flow direction is based on water table map prepared for date indicated. Both indicates a divide, with some northerly and some southerly flow components.

TABLE 2. Summary of Groundwater Sample VOC Analytical Results, Univar USA Inc., Kansas City, Missouri.

	MW-1A									
	7/24/2008	9/24/2008	1/27/2009	9/23/2009	3/26/2010	10/12/2010	4/26/2011	10/27/2011	3/12/2012	9/27/2012
Acetone	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Benzene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Bromobenzene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Bromochloromethane	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Bromodichloromethane	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Bromoform	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Bromomethane	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005
2-Butanone	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
n-Butylbenzene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
sec-Butylbenzene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
tert-Butylbenzene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Carbon disulfide	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Carbon tetrachloride	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Chlorobenzene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Chloroethane	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Chloroform	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Chloromethane	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
2-Chlorotoluene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
4-Chlorotoluene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
1,2-Dibromo-3-chloropropane	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
Dibromochloromethane	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
1,2-Dibromoethane	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Dibromomethane	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
1,2-Dichlorobenzene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
1,3-Dichlorobenzene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
1,4-Dichlorobenzene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Dichlorodifluoromethane	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
1,1-Dichloroethane	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
1,2-Dichloroethane	<0.001	<0.001	0.0011	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
1,1-Dichloroethene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
cis-1,2-Dichloroethene	0.0151	0.022	0.0509	0.0195	0.032	0.009	0.0134	0.0074	0.0257	0.0236
trans-1,2-Dichloroethene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
1,2-Dichloropropane	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
1,3-Dichloropropane	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
2,2-Dichloropropane	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
1,1-Dichloropropene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
cis-1,3-Dichloropropene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
trans-1,3-Dichloropropene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
1,4-Dioxane	NA	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA	NA
Ethylbenzene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Hexachloro-1,3-butadiene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
2-Hexanone	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Isopropylbenzene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
p-Isopropyltoluene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
4-Methyl-2-pentanone	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Methyl-tert-butyl-ether	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Methylene chloride	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Naphthalene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
n-Propylbenzene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Styrene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
1,1,1,2-Tetrachloroethane	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
1,1,2,2-Tetrachloroethane	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Tetrachloroethene	<0.001	0.004	<0.001	<b						

TABLE 2. Summary of Groundwater Sample VOC Analytical Results, Univar USA Inc., Kansas City, Missouri.

MW-2A																			
	10/19/2007	10/19/2007 Dup	7/24/2008	9/24/2008	9/24/08 Dup	1/27/2009	1/27/2009 Dup	9/23/2009	9/23/2009 Dup	3/26/2010	10/12/2010 dup	4/26/2011	4/26/11 dup	10/27/2011	10/27/2011 dup	3/12/2012	9/27/2012	2/13/2013	
Acetone	<0.01	<0.01	<0.01	0.02	0.02	<0.1	<0.5	<0.01	<0.01	<0.01	<0.01	<0.1	<0.1	<0.01	<0.01	2.37	<0.01	<0.2	
Benzene	0.0012	0.0013	0.0115	0.091	0.088	1.25	1.26	0.106	0.105	0.135	<0.001	0.534	0.314	0.0349	0.036	<0.001	1.12	2.13	
Bromobenzene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.05	<0.001	<0.001	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001	<0.001	<0.02		
Bromoform	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.05	<0.001	<0.001	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.02	
Bromomethane	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.05	<0.001	<0.001	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.02	
2-Butanone	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.5	<0.01	<0.01	<0.01	<0.01	<0.1	<0.1	<0.01	<0.01	<0.01	<0.01	<0.2	
n-Butylbenzene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.05	<0.001	<0.001	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.02	
sec-Butylbenzene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.05	<0.001	<0.001	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.02	
tert-Butylbenzene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.05	<0.001	<0.001	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.02	
Carbon disulfide	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.25	<0.005	<0.005	<0.005	<0.005	<0.05	<0.05	<0.005	<0.005	<0.005	<0.005	<0.1	
Carbon tetrachloride	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.05	<0.001	<0.001	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.02	
Chlorobenzene	0.0155	0.0186	0.0021	0.004	0.0034	<0.01	<0.05	0.0024	0.0023	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001	<0.001	0.0012	<0.02	
Chloroethane	0.0064	0.0063	<0.001	<0.001	0.0129	<0.05	0.0026	0.0026	0.0032	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001	<0.001	0.0059	<0.001	<0.02
Chloroform	0.0032	0.0034	<0.001	<0.001	<0.001	<0.01	<0.05	<0.001	<0.001	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.02	
Chloromethane	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.05	<0.001	<0.001	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.02	
2-Chlorotoluene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.05	<0.001	<0.001	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.02	
4-Chlorotoluene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.05	<0.001	<0.001	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.02	
1,2-Dibromo-3-chloropropane	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.125	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.025	<0.025	<0.0025	<0.0025	<0.0025	<0.0025	<0.05	
Dibromochloromethane	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.05	<0.001	<0.001	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.02	
1,2-Dibromethane	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.05	<0.001	<0.001	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.02	
1,2-Dichlorobenzene	0.0019	0.0025	<0.001	<0.001	<0.001	<0.01	<0.05	<0.001	<0.001	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.02	
1,3-Dichlorobenzene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.05	<0.001	<0.001	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.02	
1,4-Dichlorobenzene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.05	<0.001	<0.001	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.02	
Dichlorodifluoromethane	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.05	<0.001	<0.001	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.02	
1,1-Dichloroethane	0.0093	0.0095	0.003	0.0029	0.0025	0.0205	<0.05	0.0025	0.0024	0.0036	<0.001	<0.001	<0.01	<0.01	<0.001	0.0046	0.007	<0.02	
1,2-Dichloroethane	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.05	<0.001	<0.001	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.02	
1,1-Dichloroethene	0.0034	0.0034	<0.001	<0.001	<0.001	<0.01	<0.05	<0.001	<0.001	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.02	
cis-1,2-Dichloroethene	<0.001	<0.001	0.0014	<0.001	<0.001	<0.01	<0.05	<0.001	<0.001	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.02	
trans-1,2-Dichloroethene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.05	<0.001	<0.001	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.02	
1,2-Dichloropropane	<0.001	<0.001	<0.0																

TABLE 2. Summary of Groundwater Sample VOC Analytical Results, Univar USA Inc., Kansas City, Missouri.

	MW-3B												MW-4						MW-4A									
	10/19/2007	7/24/2008	9/24/2008	1/27/2009	9/23/2009	3/26/2010	10/12/2010	4/26/2011	10/27/2011	3/12/2012	9/27/2012	2/13/2013	2/13/13 Dup	6/26/2007	7/24/2008	9/24/2008	1/27/2009	9/23/2009	3/26/2010	10/12/2010	4/26/2011	10/27/2011	3/12/2012	9/27/2012	2/13/2013			
Acetone	0.12	0.45	1.63	1.42	<1	<2.5	<0.25	<0.2	2.12	4	<0.05	<0.5	<0.5	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	
Benzene	0.0025 J	0.0174	<0.1	<0.1	<0.1	<0.1	<0.25	<0.025	<0.05	<0.01	<0.05	<0.05	<0.05	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005		
Bromobenzene	<0.005	<0.01	<0.1	<0.1	<0.1	<0.1	<0.25	<0.025	<0.02	<0.05	<0.005	<0.05	<0.05	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005		
Bromo-chloromethane	<0.005	<0.01	<0.1	<0.1	<0.1	<0.1	<0.25	<0.025	<0.02	<0.05	<0.005	<0.05	<0.05	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005		
Bromo-dichloromethane	<0.005	<0.01	<0.1	<0.1	<0.1	<0.1	<0.25	<0.025	<0.02	<0.05	<0.005	<0.05	<0.05	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005		
Bromoform	<0.005	<0.01	<0.1	<0.1	<0.1	<0.1	<0.25	<0.025	<0.02	<0.05	<0.005	<0.05	<0.05	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005		
Bromo-methane	<0.005	<0.01	<0.1	<0.1	<0.1	<0.1	<0.25	<0.025	<0.02	<0.05	<0.005	<0.05	<0.05	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005		
2-Butanone	<0.05	<0.1	<1	<1	<1	<2.5	<0.25	<0.2	<0.25	<0.5	<0.05	<0.5	<0.5	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05		
n-Butylbenzene	<0.005	<0.01	<0.1	<0.1	<0.1	<0.1	<0.25	<0.025	<0.02	<0.05	<0.005	<0.05	<0.05	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005		
sec-Butylbenzene	<0.005	<0.01	<0.1	<0.1	<0.1	<0.1	<0.25	<0.025	<0.02	<0.05	<0.005	<0.05	<0.05	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005		
tert-Butylbenzene	<0.005	<0.01	<0.1	<0.1	<0.1	<0.1	<0.25	<0.025	<0.02	<0.05	<0.005	<0.05	<0.05	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005		
Carbon disulfide	<0.025	<0.05	<0.5	<0.5	<0.5	<1.25	<0.125	<0.125	<0.25	<0.25	<0.05	<0.05	<0.05	<0.005	<0.001	<0.001	<0.005	<0.005	<0.025	<0.025	<0.005	<0.005	<0.005	<0.025	<0.025	<0.025		
Carbon tetrachloride	<0.005	<0.01	<0.1	<0.1	<0.1	<0.1	<0.25	<0.025	<0.02	<0.05	<0.005	<0.05	<0.05	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005		
Chlorobenzene	<0.005	<0.01	<0.1	<0.1	<0.1	<0.1	<0.25	<0.025	<0.02	<0.05	<0.005	<0.05	<0.05	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005		
Chloroethane	2.04	2.62	2.5	5.78	4.35	7.61	1.58	1.21	2.33	6.09	6.3	3.94	4.1	<0.005	0.0024	0.0025	0.0057	<0.005	0.0138	0.0144	<0.005	0.0068	<0.001	<0.005	<0.005	<0.005		
Chloroform	0.0011 J	<0.01	<0.1	<0.1	<0.1	<0.1	<0.25	<0.025	<0.02	<0.05	<0.005	<0.05	<0.05	<0.005	<0.001	<0.001	<0.005	<0.005	0.0055	<0.005	0.0025	0.0111	<0.005	<0.005	<0.005	<0.005		
Chloromethane	<0.005	<0.01	<0.1	<0.1	<0.1	<0.1	<0.25	<0.025	<0.02	<0.05	<0.005	<0.05	<0.05	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005		
2-Chlorotoluene	<0.005	<0.01	<0.1	<0.1	<0.1	<0.1	<0.25	<0.025	<0.02	<0.05	<0.005	<0.05	<0.05	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005		
4-Chlorotoluene	<0.005	<0.01	<0.1	<0.1	<0.1	<0.1	<0.25	<0.025	<0.02	<0.05	<0.005	<0.05	<0.05	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005		
1,2-Dibromo-3-chloropropane	<0.0125	<0.025	<0.25	<0.25	<0.625	<0.05	<0.0625	<0.125	<0.125	<0.125	<0.0125	<0.025	<0.025	<0.0025	<0.0025	<0.0125	<0.0125	<0.0125	<0.0125	<0.0125	<0.0125	<0.0125	<0.0125	<0.0125	<0.0125	<0.0125		
Dibromo-chloromethane	<0.005	<0.01	<0.1	<0.1	<0.1	<0.1																						

TABLE 2. Summary of Groundwater Sample VOC Analytical Results, Univar USA Inc., Kansas City, Missouri.

All concentrations in milligrams per liter (mg/L).

< = not present at the laboratory detection limit shown.

All detections shown in bold. ND = none detected.

TABLE 2. Summary of Groundwater Sample VOC Analytical Results, Univar USA Inc., Kansas City, Missouri.

	MW-8												MW-9											
	10/19/2007	7/24/2008	9/24/2008	1/27/2009	9/23/2009	3/26/2010	3/26/2010 Dup	10/12/2010	4/26/2011	10/27/2011	3/12/2012	9/27/2012	2/13/2013	7/24/2008	7/24/08 Dup	9/24/2008	1/27/2009	9/23/2009	3/26/2010	4/26/2011	10/27/2011	3/12/2012	9/27/2012	
Acetone	<0.2	<0.1	<0.1	<0.1	<0.1	<0.01	<0.01	<0.02	<0.01	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.01	<0.2	<0.5
Benzene	2.48	0.0841	0.0722	0.124	0.755	0.0747	0.0276	0.0199	0.102	0.137	0.0814	0.0011	0.0904	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.02	<0.05
Bromobenzene	<0.02	<0.01	<0.01	<0.01	<0.01	<0.001	<0.001	<0.002	<0.001	<0.01	<0.001	<0.001	<0.001	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.02	<0.05
Bromochloromethane	<0.02	<0.01	<0.01	<0.01	<0.01	<0.001	<0.001	<0.002	<0.001	<0.01	<0.001	<0.001	<0.001	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.02	<0.05
Bromodichloromethane	<0.02	<0.01	<0.01	<0.01	<0.01	<0.001	<0.001	<0.002	<0.001	<0.01	<0.001	<0.001	<0.001	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.02	<0.05
Bromoform	<0.02	<0.01	<0.01	<0.01	<0.01	<0.001	<0.001	<0.002	<0.001	<0.01	<0.001	<0.001	<0.001	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.02	<0.05
Bromomethane	<0.02	<0.01	<0.01	<0.01	<0.01	<0.001	<0.001	<0.002	<0.001	<0.01	<0.001	<0.001	<0.001	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.02	<0.05
2-Butanone	<0.2	<0.1	<0.1	<0.1	<0.1	<0.01	<0.01	<0.02	<0.01	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.01	<0.2	<0.5
n-Butylbenzene	<0.02	<0.01	<0.01	0.0104	<0.01	0.0015	0.001	<0.002	<0.001	<0.01	<0.001	<0.001	<0.001	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.02	<0.05
sec-Butylbenzene	0.0067 J	<0.01	<0.01	<0.01	<0.01	<0.001	<0.001	<0.002	<0.001	<0.01	<0.001	<0.001	<0.001	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.02	<0.05
tert-Butylbenzene	<0.02	<0.01	<0.01	<0.01	<0.01	<0.001	<0.001	<0.002	<0.001	<0.01	<0.001	<0.001	<0.001	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.02	<0.05
Carbon disulfide	0.0023 J	<0.05	<0.05	<0.05	<0.05	<0.005	<0.005	<0.01	<0.005	<0.05	<0.005	<0.005	<0.005	<0.05	<0.05	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.1	<0.25	
Carbon tetrachloride	<0.02	<0.01	<0.01	<0.01	<0.01	<0.001	<0.001	<0.002	<0.001	<0.01	<0.001	<0.001	<0.001	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.02	<0.05
Chlorobenzene	<0.02	<0.01	<0.01	<0.01	<0.01	<0.001	<0.001	<0.002	<0.001	<0.01	<0.001	<0.001	<0.001	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.02	<0.05
Chloroethane	<0.02	<0.01	<0.01	<0.01	<0.01	<0.001	<0.001	0.002	<0.001	0.0133	<0.001	<0.001	<0.001	4.02	3.98	3.7	4.66	3.64	2.18	1.28	1.75	2.62	2.86	
Chloroform	<0.02	<0.01	<0.01	<0.01	<0.01	<0.001	<0.001	<0.002	<0.001	<0.01	<0.001	<0.001	<0.001	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.02	<0.05
Chloromethane	<0.02	<0.01	<0.01	<0.01	<0.01	<0.001	<0.001	<0.002	<0.001	<0.01	<0.001	<0.001	<0.001	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.02	<0.05
2-Chlorotoluene	<0.02	<0.01	<0.01	<0.01	<0.01	<0.001	<0.001	<0.002	<0.001	<0.01	<0.001	<0.001	<0.001	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.02	<0.05
4-Chlorotoluene	<0.02	<0.01	<0.01	<0.01	<0.01	<0.001	<0.001	<0.002	<0.001	<0.01	<0.001	<0.001	<0.001	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.02	<0.05
1,2-Dibromo-3-chloropropane	<0.05	<0.025	<0.025	<0.025	<0.025	<0.0025	<0.0025	<0.005	<0.0025	<0.025	<0.0025	<0.0025	<0.0025	<0.025	<0.025	<0.125	<0.125	<0.25	<0.25	<0.25	<0.25	<0.025	<0.05	<0.125
Dibromochloromethane	<0.02	<0.01	<0.01	<0.01	<0.01	<0.001	<0.001	<0.002	<0.001	<0.01	<0.001	<0.001	<0.001	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.02	<0.05
1,2-Dibromoethane	<0.02	<0.01	<0.01	<0.01	<0.01	<0.001	<0.001	<0.002	<0.001	<0.01	<0.001	<0.001	<0.001	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.02	<0.05
Dibromomethane	<0.02	<0.01	<0.01	<0.01	<0.01	<0.001	<0.001	<0.002	<0.001	<0.01	<0.001	<0.001	<0.001	<0.01	<0.01	<0.05	<0.05	<0.05</						

TABLE 2. Summary of Groundwater Sample VOC Analytical Results, Univar USA Inc., Kansas City, Missouri.

All concentrations in milligrams per liter (mg/L).

< = not present at the laboratory detection limit shown.

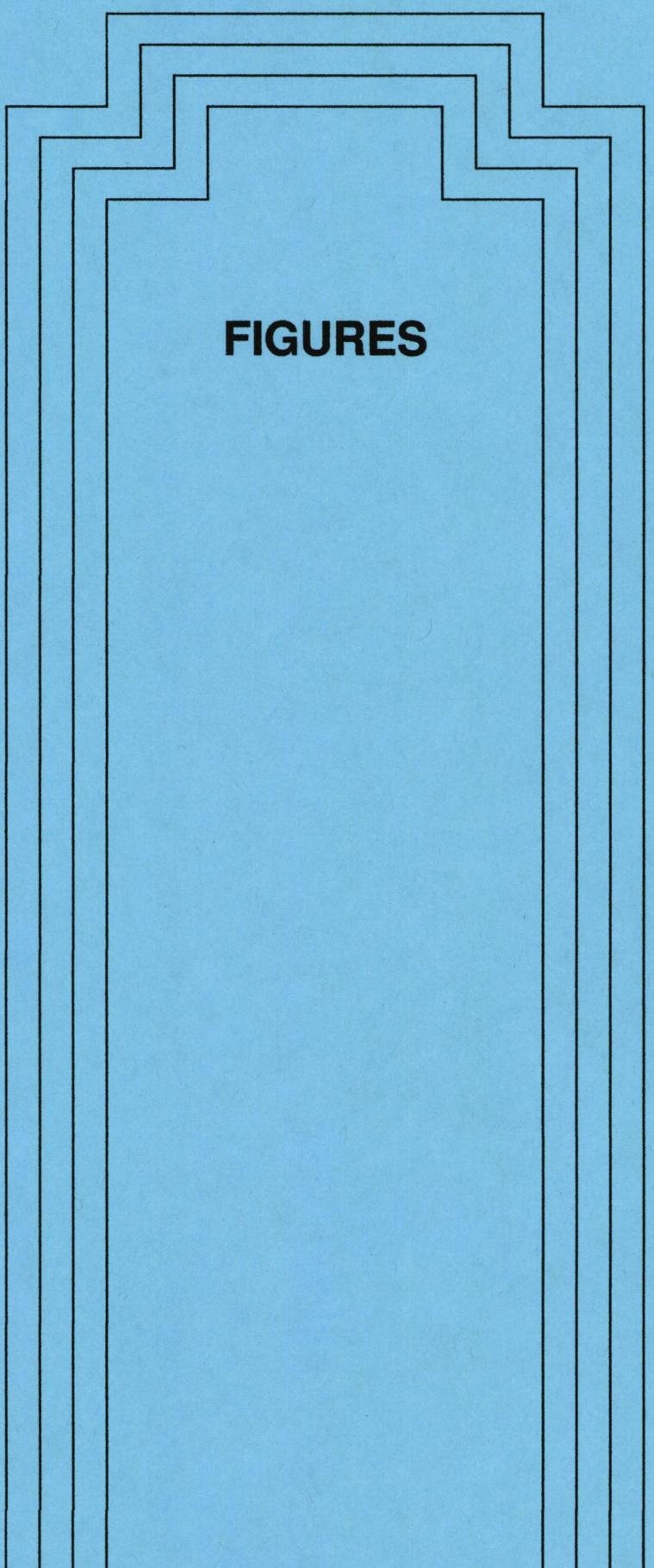
All detections shown in bold. ND = none detected.

TABLE 2. Summary of Groundwater Sample VOC Analytical Results, Univar USA Inc., Kansas City, Missouri.

All concentrations in milligrams per liter (mg/L).

< = not present at the laboratory detection limit shown.

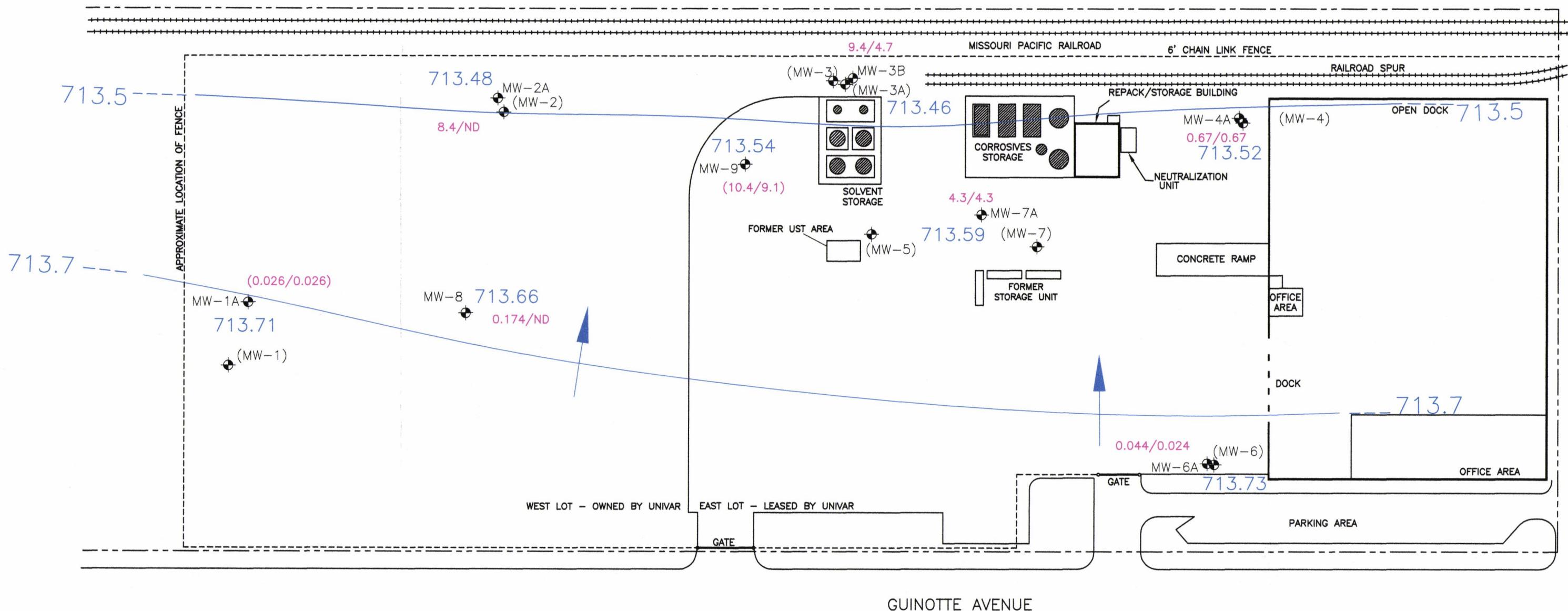
< = not present at the laboratory detection limit shown.
All detections shown in bold. ND = none detected.



FIGURES

MW-10 NA

(0.683/0.674)



LEGEND

- MONITORING WELL WITH WATER TABLE
718.63 GROUNDWATER ELEVATION (2/13/13)
Note: Wells shown in () are not used due to
dry/inadequate screen interval.

725 CONTOUR OF APPROXIMATELY EQUAL WATER ELEVATION
WITH ARROW SHOWING DIRECTION OF GROUNDWATER FLOW

2.89/0.022 GROUNDWATER SAMPLE TOTAL VOC CONCENTRATION/TOTAL CVOC CONCENTRATION (mg/L; sampled 2/13/13; ND=none detected)

(0.89/0.022) GROUNDWATER SAMPLE DATA FROM PRIOR SAMPLING EVENT. NOT SAMPLED AT THIS TIME

MONITORING WELL AND GEOPROBE LOCATIONS SURVEYED BY
SHAFER, KLINE & WARREN, INC. FOR UNIVAR USA INC. MAY
2007, DEC 2007, and July 2008. ALL OTHER LOCATIONS ARE
APPROXIMATE.

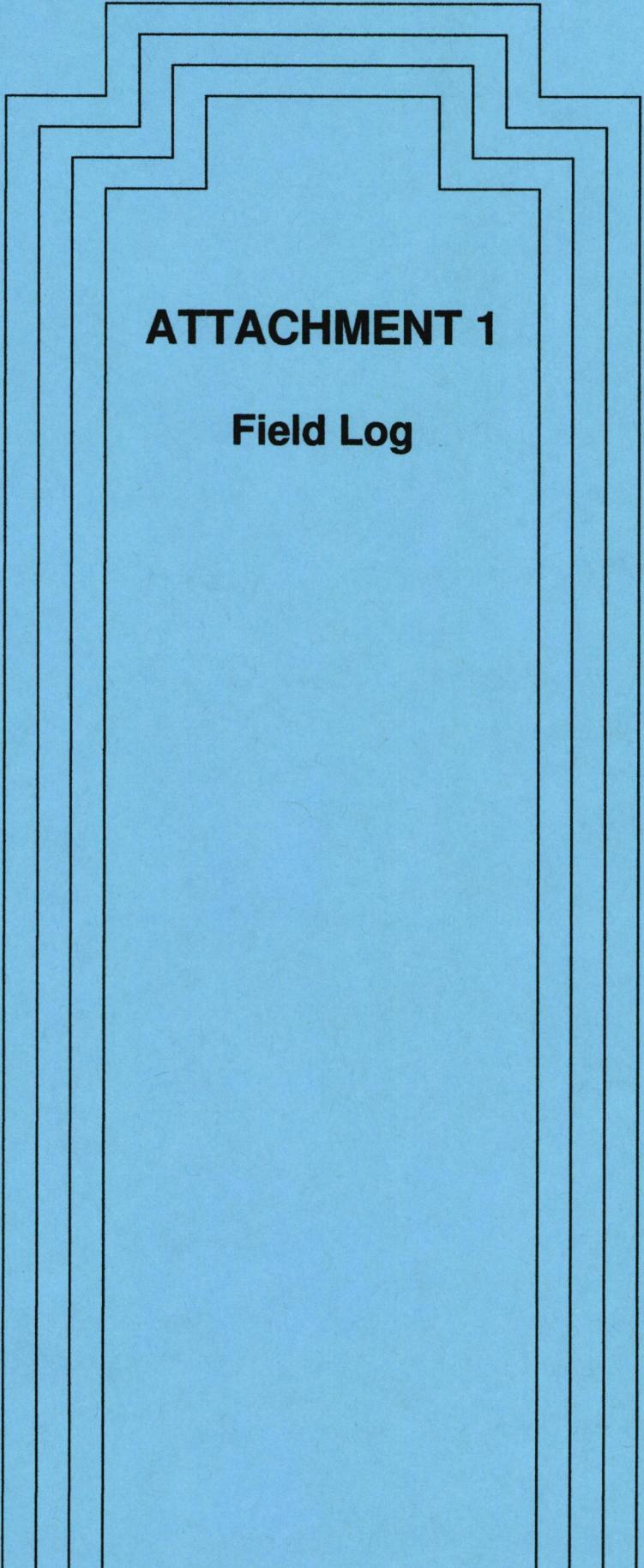


0 30 60

SCALE IN FEET

**UNIVAR USA INC.
KANSAS CITY, MISSOURI**

APPROVED T.SULLIVAN	DATE 3-28-13
FILENAME: wta_2-11-13	FIGURE 1



ATTACHMENT 1

Field Log

Water Sampling Log

Page 1 of 1

Site:	Univar Kansas City, MO				Weather: sunny, breezy, 40-50 deg.				
Proj No:	130								
Well No.	MW-1A	MW-2A	MW-3B	MW-4A	MW-6A	MW-7A	MW-8	MW-9	MW-10
Casing	2" PVC	2" PVC	2" PVC	2" PVC	2" PVC	2" PVC	2" PVC	2" PVC	2" PVC
Date		2/13/13	2/13/13	2/13/13	2/13/13	2/13/13	2/13/13		
Total Depth (ft)	30.2	34.45	34.25	30.2	34.64	30.28	33.14	30.62	33.62
Wtr Level (ft)	29.66	29.14	29.91	28.10	27.49	29.16	29.92	30.02	33.34*
Wtr Colum (ft)	0.54	5.31	4.34	2.1	7.15	1.12	3.22	0.6	0.28
Gal / foot	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16
Gal in well	0.09	0.85	0.69	0.34	1.14	0.18	0.52	0.10	0.04
Gal Purged	-	3	2.0	1	3.5	1	2	-	-
Sampled Time	NA	11:50	3:15	1:00	12:15	1:40	2:10	NA	NA
Turbidity		slight	very turbid	turbid	turbid	v. sl. Turbid	very turbid		
Color		gray	black-gray	gray-tan	tan-brown	clear to v. lt gray	black		
Odor		slight	yes	none	none	none	slight		
Temperature		60.9	62.3	64.3	65.5	64.7	59.8		
pH		6.98	7.02	6.83	6.80	6.81	6.87		
Conductivity		1.4	1.9	1.4	1.3	1.7	1.3		
Sample Method		bail	bail	bail	bail	bail	bail		
Analyses		VOCs 8260	VOCs 8260	VOCs 8260	VOCs 8260	VOCs 8260	VOCs 8260		
Container		3-40 ml VOAs	3-40 ml VOAs	3-40 ml VOAs	3-40 ml VOAs	3-40 ml VOAs	3-40 ml VOAs		
Preservative		HCl, ICE	HCl, ICE	HCl, ICE	HCl, ICE	HCl, ICE	HCl, ICE		

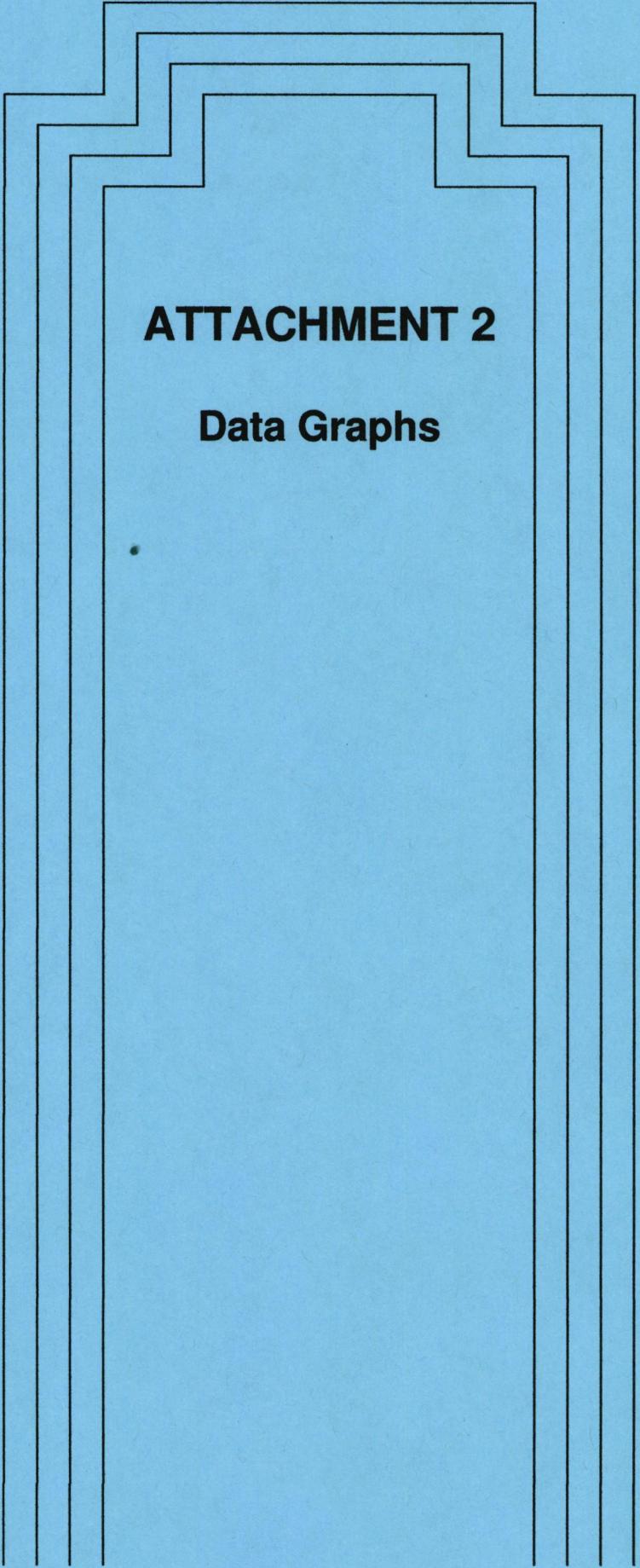
Notes:	Dup-1 = MW-3A	Drum label: Drum-1	2/13/2013	approx 1/3 full
	FB-1 @ 11:10, MW-1A	NA= insufficient water to sample.		
	Drum 2-13-13	*=likely just water in well end piece rather than water table.		

Field Parameter Instrument Calibration

Performed on: 2/11/2013

Performed by: TS

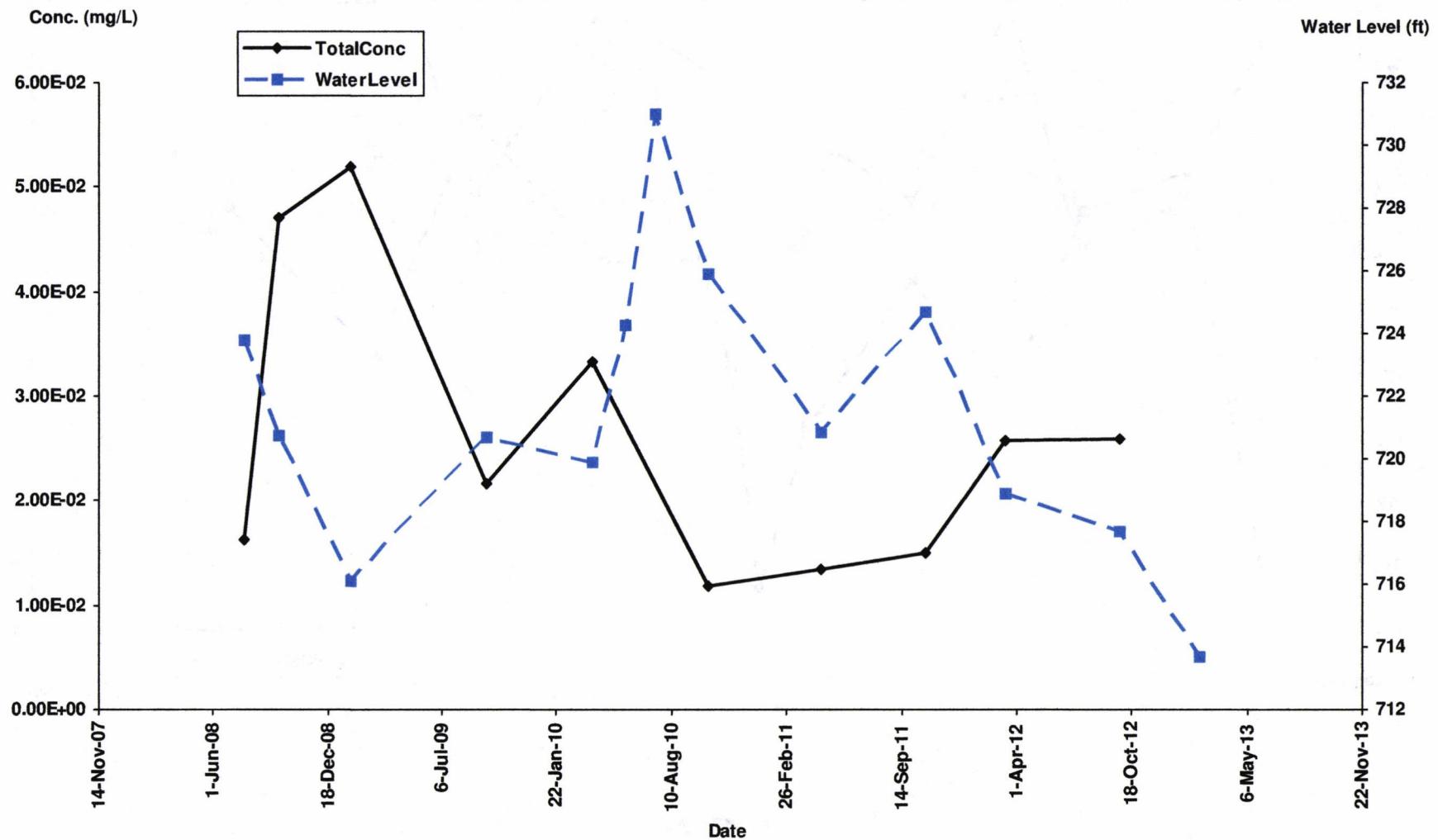
Method of pH : Two point, 7.0 and 4.0 su.



ATTACHMENT 2

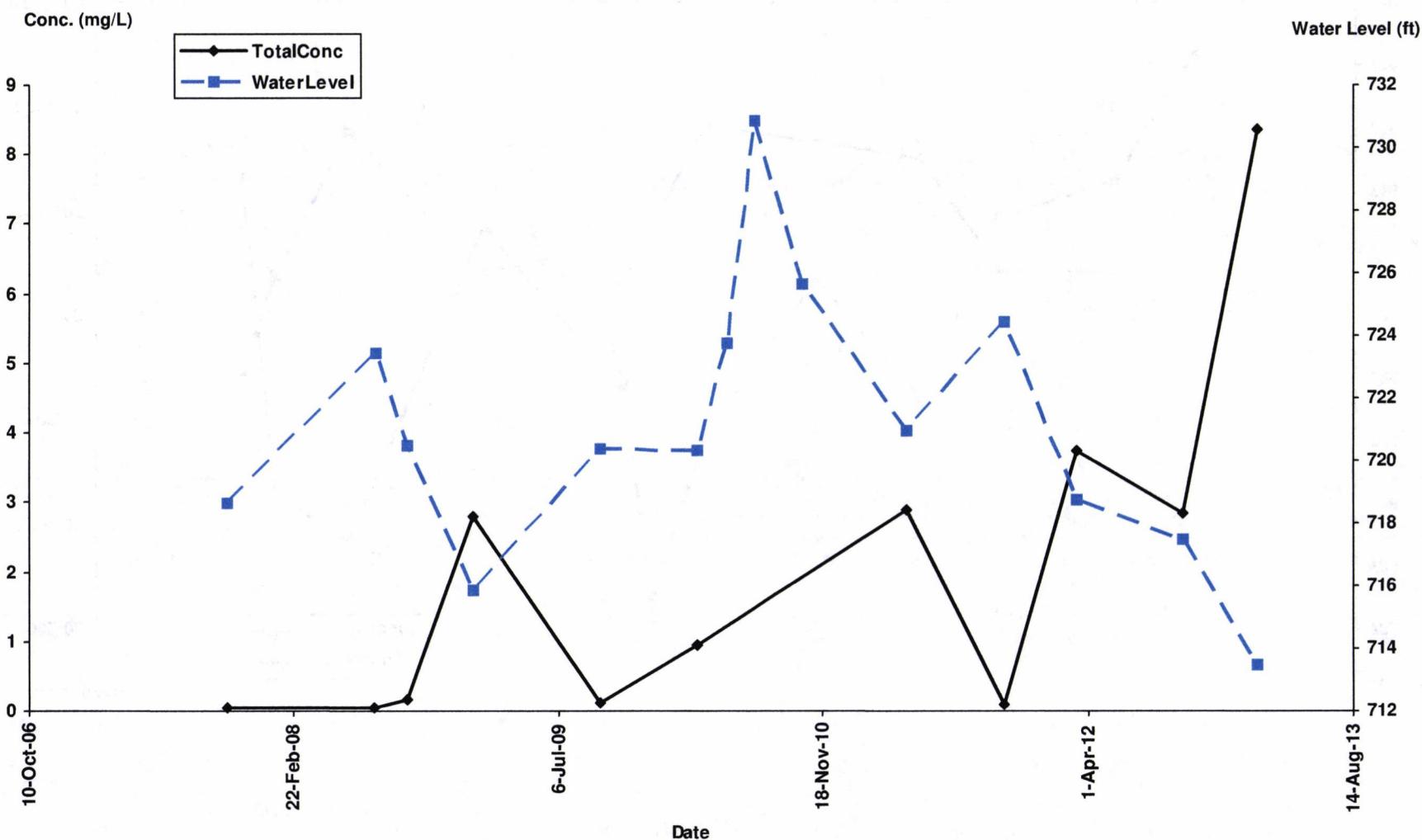
Data Graphs

MW-1A

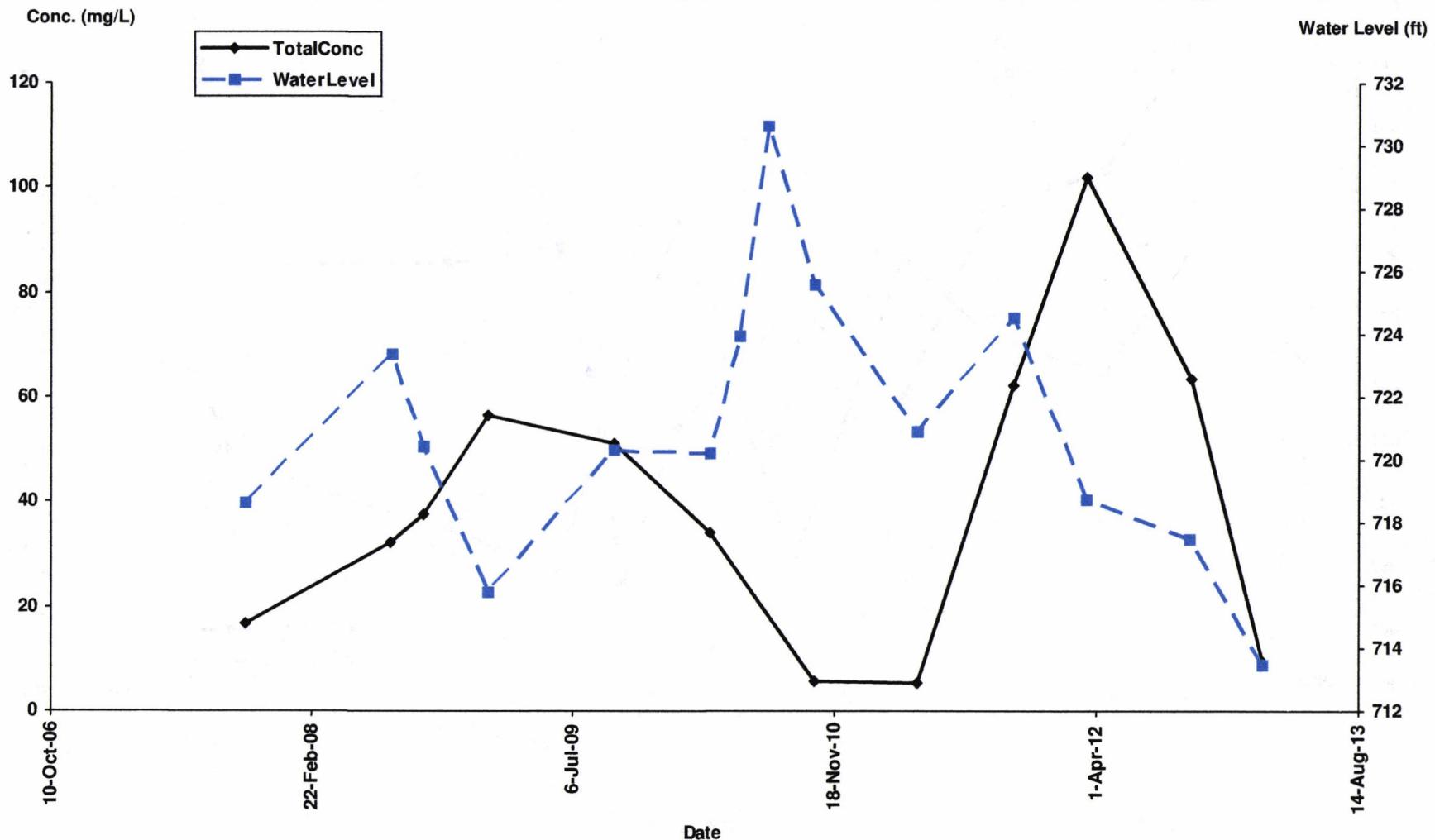


Graph of Total VOC Concentrations & Water Levels

MW-2A

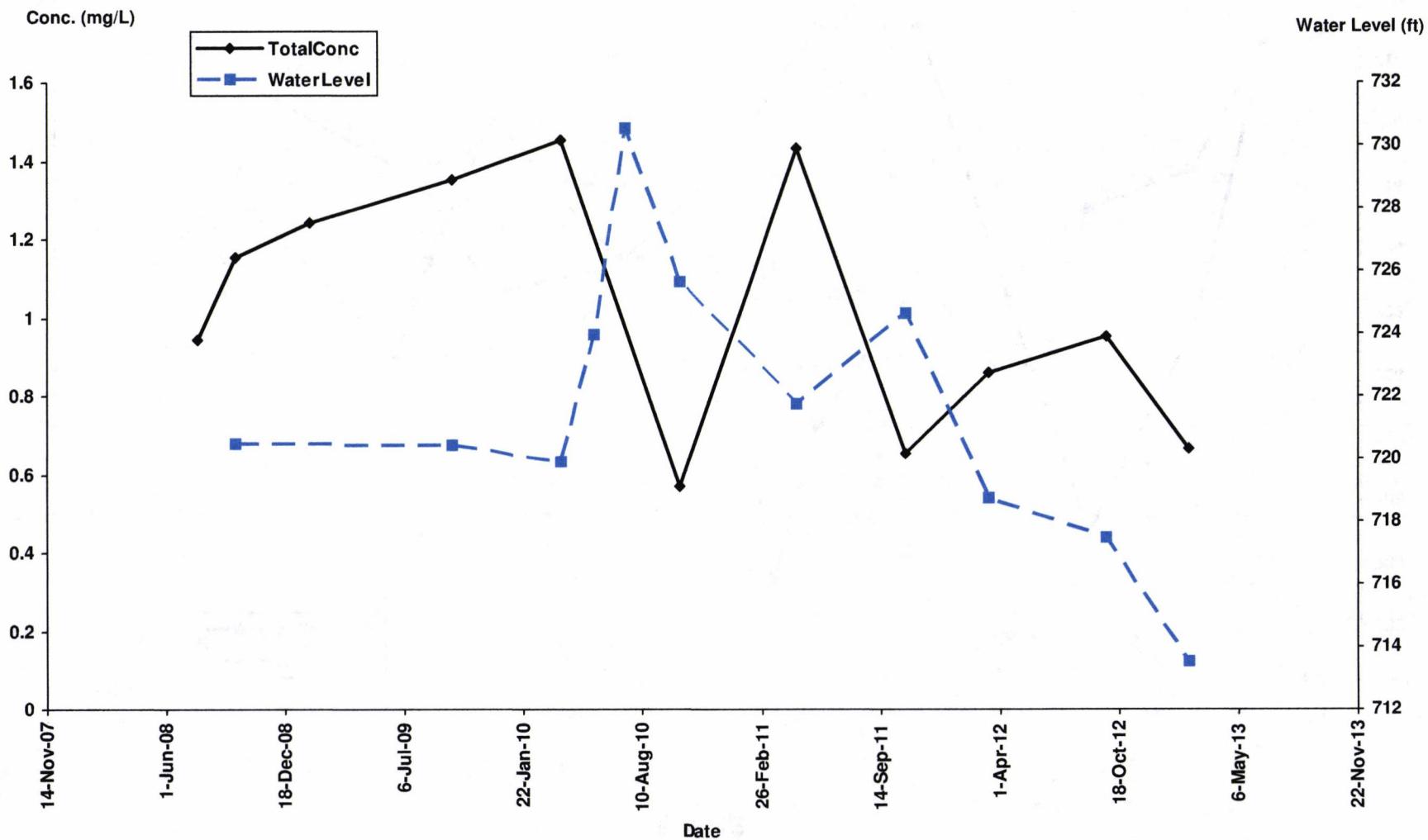


MW-3B



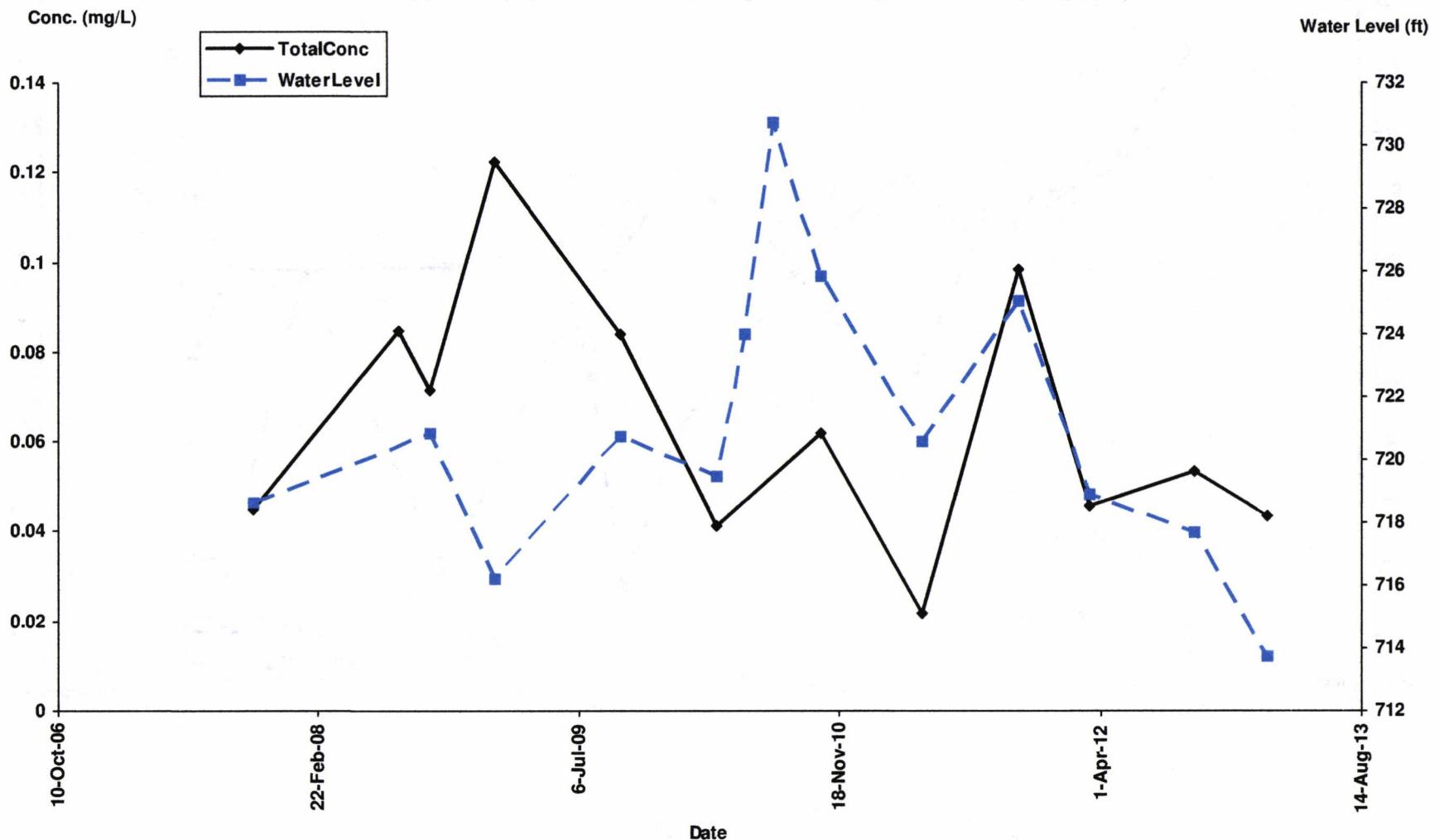
Graph of Total VOC Concentrations & Water Levels

MW-4A



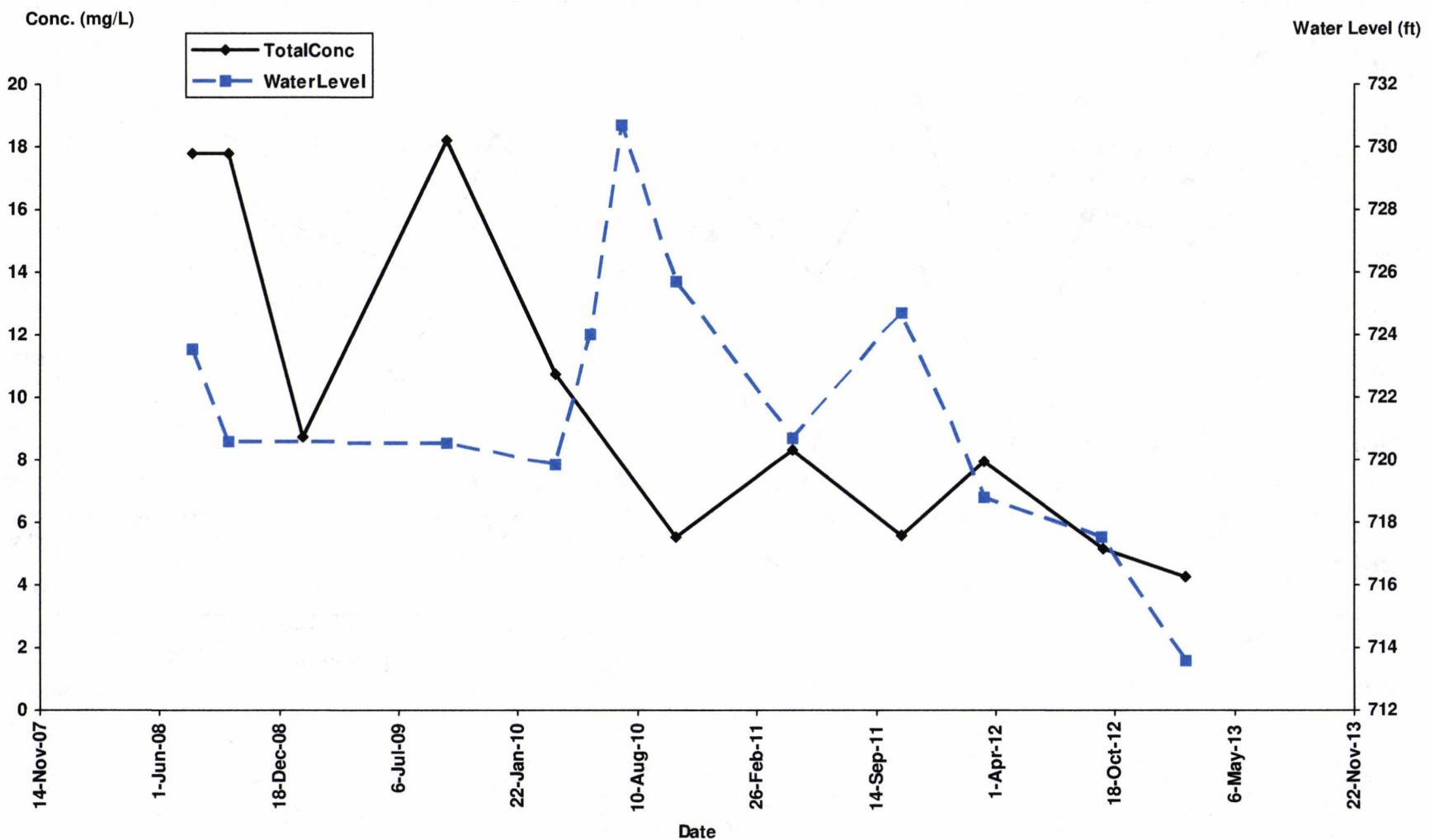
Graph of Total VOC Concentrations & Water Levels

MW-6A



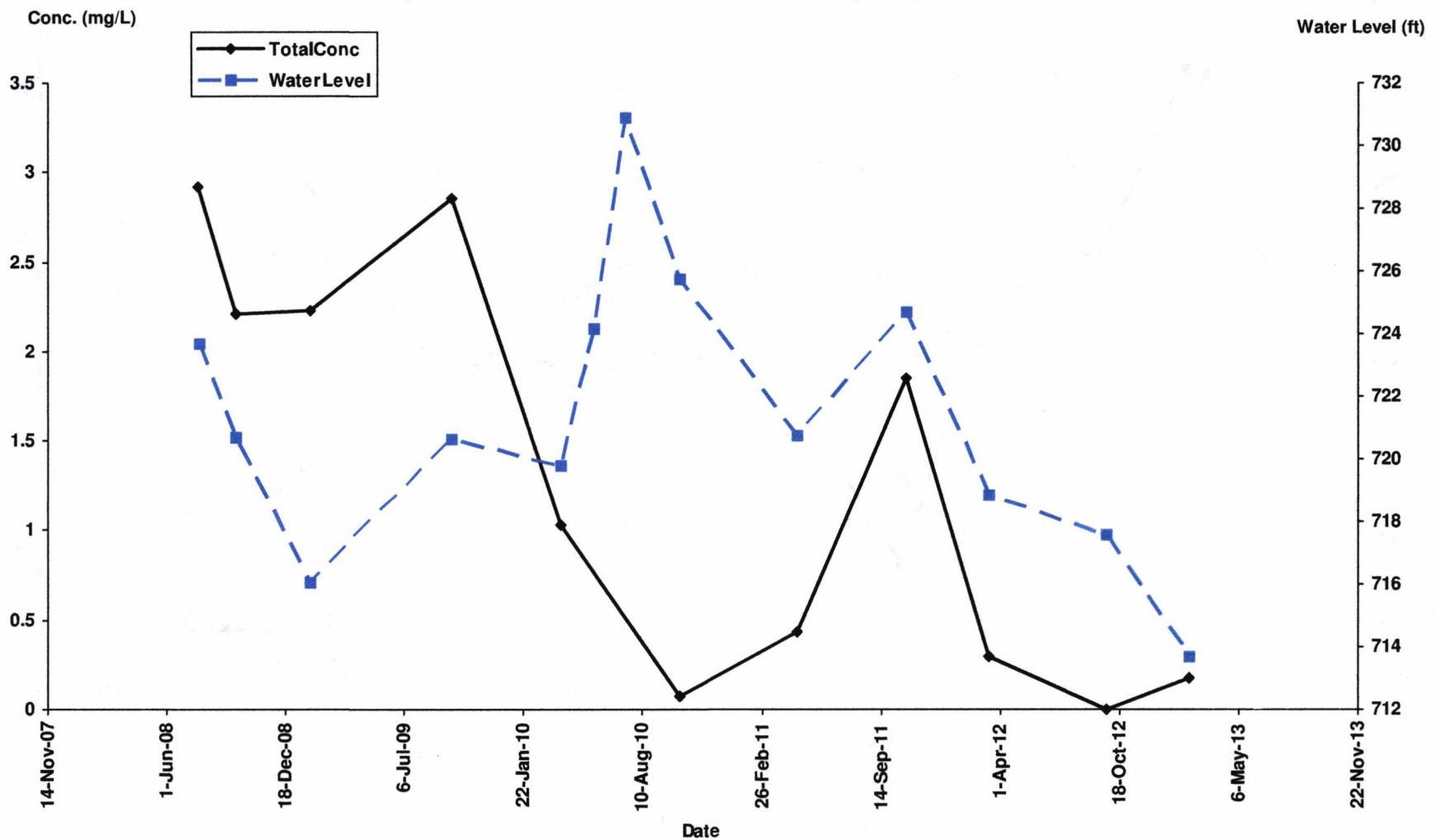
Graph of Total VOC Concentrations & Water Levels

MW-7A



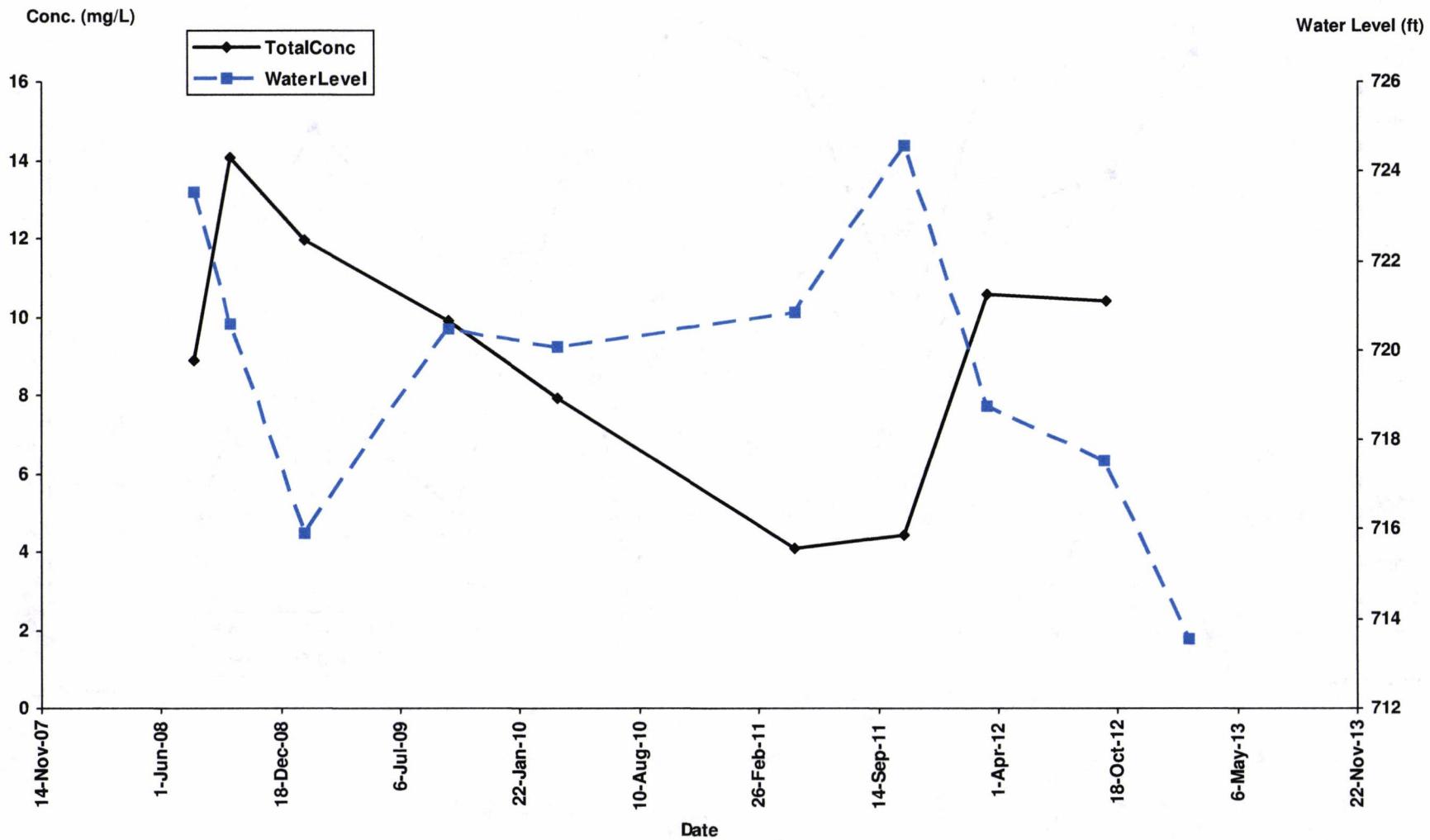
Graph of Total VOC Concentrations & Water Levels

MW-8



Graph of Total VOC Concentrations & Water Levels

MW-9



Graph of Total VOC Concentrations & Water Levels

MW-10

